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Mutagenic potential of water from Pelotas Creek in Rio Grande do Sul, Brazil

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ABSTRACT. Water resource degradation is one of mankind's greatest worries, as it causes direct and indirect damage to the associated biota. We initiated a water monitoring study in Pelotas Creek in 2003 in order to assess the mutagenic effect of the creek's waters. *Allium cepa* cells exposed to water samples and a chronically exposed macrophyte were analyzed, through evaluation of the mitotic index, mitotic anomalies, interphase anomalies, and total anomalies. Five points were chosen along the lower course of Pelotas Creek, from which water samples and floating pennywort (*Hydrocotyle ranunculoides*, Apiaceae) were collected in 2006 and 2007. The enteric bacterium *Escherichia coli* was found at all sampling points; in the physical-chemical analysis, a few variables exceeded permitted limits, pH (from 6 to 9), chloride (250 mg/L), hardness (from 10 to 200 mg $CaCO_3$/L), and conductivity (100 μΩ/cm). There was an increased number of cytogenetic anomalies in exposed *A. cepa* cells and in the pennywort in 2006 relative to 2007, which may be explained by the increased rainfall, which was three times greater in 2007 at some stations than in 2006.

Key words: Pelotas Creek; *Hydrocotyle ranunculoides*; *Allium cepa*; Mutagenicity

